

MARZUKAS, J. I.

Marzukas, J. I. "The effect of the... on the... of the...
... ..
In America --

So:, (1960-1961)

MIRZAYAN, S. I.

Mirzoyan, S. I. "Seven cases of espionage in the Soviet Union,"
Izvestiya KGB (Soviet Security) (Moscow), 1-11, 1981, 1-11-82 --
In American -- Summary in English

So: -3566, 1 March 83, Leningrad, U.S.S.R. (nykh state, ...)

31073. WISBYAN, I. I. 1954, 1955.

Perifericheskiy paralich lit'evogo nerva po le ubiva o ruzh'ya. 1954, 1955.
delo, 1954, no. 1, str. 46-47

MIRZOYAN, G. I. , ANTONYAN, A. A.

Spiders

"Bite of Lathrodectus tredecimguttatus Rossi." Sov. med. 16 no. 5, 1952.

Monthly List of Russian Accessions, Library of Congress, October 1952. UNCLASSIFIED.

MIRZOYAN, G.I.; ANTONYAN, A.A.; TOROSYAN, S.A.; STEPANYAN, A.V.

On the problem of the pathology of vegetative function. Zhur.nevr.
i psikh. 55 no.7:531-533 '55. (MLRA 8:10)

1. Poliklinika II Meditsinskogo ob'yedineniya Yerevana (glavnyy
vrach-- A. A. Yesayan)
(AUTONOMIC NERVOUS SYSTEM, diseases)

MIRZOYAN, G.I.; HERSESYAN, A.S.; AFTONYAN, A.A.; TRORSYAN, S.A.; MURADYAN, G.T.

Disorders of the nervous system in trichinosis. Zhur.nevr. i psikh.
Supplement:18-19 '57. (MIRA 11:1)

1. Klinika nervnykh bolezney (zav. - prof. G.I.Mirzoyan) II Meditsinskogo ob'yedineniya, Yerevan.
(NERVOUS SYSTEM--DISEASES)
(TRICHINA AND TRICHINOSIS)

MIRZOYAN, G.I.

"Emergency neuropathology" by E.K. Bogolepov. Reviewed by G.I.
Mirzolian. Zhur.nevr. i psikh. 58 no.10:1275-1276 '58 (MIRA 11:11)
(NERVOUS SYSTEM--DISEASES)

MIRZOYAN, G.I., prof.

Some controversial problems of lumbosacral radiculitis. Trudy Erev.
med.inst. no.11:391-396 '60. (MIRA 15:11)

1. Iz kliniki nervnykh bolezney fakul'teta usovershenstvovaniya
vrachey (zav. prof. Mirzoyan, G.I.) Yerevanskogo meditsinskogo
instituta.

(NERVES, SPINAL—DISEASES)

MIRZOYAN, G.I., prof.; AVAKIMOVA, E.A.; MEGRABYAN, M.TS.

Functional state of the pancreas in organic lesions of the brain.
Trudy Erev.med.inst. no.11:397-402 '60. (MIRA 15:11)

1. Iz kliniki nervnykh bolezney fakul'teta usovershenstvovaniya
vrachey (zav. klinikoy - prof. G.I.Mirzoyan) Yerevanskogo
meditsinskogo instituta.
(PANCREAS) (BRAIN—DISEASES)

CHIZMEDZHYAN, Tat'yana Akopovna; MIRZOYAN, G.I., otv. red.;
SHTIBEN, R.A., red.izd-va; GORCYAN, G.L., tekhn. red.

[Some problems of the clinical aspect and the therapy of
neuroses with a pronounced cardiovascular syndrome] Neko-
torye voprosy kliniki i terapii nevrozov s vyrazhennym
serdechno-sosudistym sindromom. Erevan, Izd-vo Akad. nauk
Armianskoi SSR, 1962. 56 p. (MIRA 16:4)
(NEUROSES) (CARDIOVASCULAR SYSTEM--DISEASES)

OGANESYAN, Leon Andreyevich; MIRZOYAN, G.I., red.; LOLASHYAN,
Z.L., red.

[Correlations between the mental and somatic spheres in the
clinical aspects of internal diseases] O vzaimootnosheniakh
mezhdu psikhicheskoi i somaticheskoi sferami v klinike vnut-
rennikh boleznei. Erevan, Izd-vo AN Armianskoi SSR, 1961.
(MIRA 18:6)
463 p.

LEVIN, M.M.; MIRZOYAN, O.S.

Centrifugal casting of thick-walled steel blanks. Lit. proizv.
no. 2:24-25 S '61. (MIRA 14:6)
(Centrifugal casting)

S/148/62/000/001/014/015
E193/E383

14160

AUTHOR: Mirzoyan, G.S.

TITLE: Influence of thermal conditions and centrifugal forces
on the formation of shrinkage defects in steel castings

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya
metallurgiya, no. 1, 1962, 177 - 182

TEXT: The object of the present investigation was to study
the effect of thermal conditions and centrifugal forces on the
formation and distribution of shrinkage porosity in centrifugal
steel castings. Various types of steels were used in the
preparation of experimental castings up to 350 kg in weight and
175 mm wall thickness. The dimensions and distribution of
pores were determined by X-ray/^{and} γ-radiography applied to specimens
cut from various parts of the castings. Quantitative determination
of the degree of shrinkage porosity was carried out by determining
the density of these specimens both by gravimetric and ultrasonic
methods. The difficulties due to shrinkage are encountered
mainly in the production of thick-walled castings in which, under

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S/148/62/000/001/014/015

Influence of thermal conditionsE193/E383

normal conditions, solidification starts at both external and internal surfaces, the shrinkage porosity being usually located in the plane at which the two solidification fronts meet. The formation of shrinkage porosity under these conditions can be prevented by ensuring unidirectional solidification, proceeding from the external surface inwards. The means of achieving this object depend on the heat-transfer conditions, as determined by the geometry of the casting. In the case of ring-shaped castings, whose height is small in relation to the wall thickness, heat is lost mainly by radiation. In the case of thick-walled tubes, radiation losses to the surrounding medium are small and can be neglected. It was because of these considerations that different expedients were tried to ensure unidirectional solidification. In the case of ring-shaped castings an exothermic mixture (based on thermite) was sprayed onto the surface of the molten metal. Moulds with closed ends were used in the case of thick-walled tubes. Both these remedies were effective in preventing the formation of shrinkage porosity. The

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influence of thermal conditions S/148/62/000/001/014/015
E197/E303

effectiveness of application of moulds with closed ends was indicated by the fact that, when such a mould was completely filled, a casting was obtained in which all the porosity, amounting to 2 - 3% of the castings volume, was concentrated along its axis. Since, other conditions being equal, the formation of shrinkage porosity in steel castings of a given composition depends on the cooling capacity of the mould, the casting temperature, thickness of the casting, and pouring rate, the effect of these factors was studied in the next series of experiments. The intensity of heat-transfer was measured by assessing the rate of displacement of the solidification front, measured by a method which entailed stopping the rotating mould during the solidification process. The position of the solidification front at the moment of stopping was registered by a change of the angular velocity of the liquid phase relative to the solidified metal, which caused a marked change in the macro-structure of the casting, so that the position of the solidification front at the moment of slowing down of the mould could be easily identified on sulphur prints taken from macro-

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S/148/62/000/001/014/015
influence of thermal conditionsE193/E383

sections of experimental castings. The cooling capacity of the moulds was varied by changing the thickness of the quartz-sand dressing. It was found that on increasing the thickness of the mould dressing from 2.5 to 10 mm, the porosity zone on the internal surface of a centrifugal casting (O.D. - 200 mm, wall thickness - 80 mm) of steel 35 (35L) increased from 3 to 18% of the castings volume. On increasing the wall thickness to 170 mm (with the same thickness of mould dressing), the porosity increased from 18 - 26%. It was found also that in order to ensure the minimum degree of shrinkage porosity (2 - 3%) the rate of solidification must not be less than 2 mm/min. The method of slowing down the speed of rotation of the mould was used also to study the effect of centrifugal force on the rate of solidification (and therefore on the degree of shrinkage porosity). The magnitude of the centrifugal force was varied by varying either the speed of the machine or the diameter of the casting. The effect of the first variable is shown in Fig. 3, where the thickness (mm)

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Influence of thermal conditions S/148/62/000/001/014/015
E193/E383

of the solidified skin is plotted against time (min). Curves 1 and 2 relating, respectively, to results obtained for the machine operating at 500 and 600 r.p.m. It will be seen that in the latter case the thickness of metal solidified in 15 min was 20% greater than that formed at the slower speed. Similarly, with the 10% of the casting increasing from 75 to 300 and 150 mm and the wall thickness increasing from 75 to 115 and 175 mm, the thickness of the solidified skin formed in 15 min increased from 75 to 10 and 115 mm, respectively. It was also found that the rate of solidification increased with increasing carbon content of the steel. This effect is illustrated in Fig. 1, where the thickness (mm) of the solidified skin is plotted against time (min), (curves 1-5 relating to steels with 0.2, 0.6 and 0.9% C, respectively. The results obtained indicated that to ensure minimum degree of shrinkage porosity, the centrifugal casting machine should be operated at maximum possible speeds. Application of the findings reported in the present paper made it possible to produce under industrial

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Influence of thermal conditions S/146/62/000/001/014/015
E195/E383

conditions sound castings up to 0.8 tons in weight, 850 mm in diameter and 315 mm wall thickness. Prof. Bery directed the work. There are 5 figures and 3 Soviet-bloc references.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya
(Central Scientific Research Institute of Technology and Machine Building)

SUBMITTED: April 25, 1961

Card 6/7

LEVIN, M.M.; MIRZOYAN, G.S.; ZAV'YALOV, V.F.

Centrifugal casting of cogwheel blanks. Trakt. i sel'khoz-
mash. 33 no.10:43-45 O '63. (MIRA 17:1)

1. TSentral'nyy nauchno-issledovatel'skiy institut tekhnolo-
gii i mashinostroyeniya.

MIRZOYAN, G.S.; ZAV'YALOV, V.F.; LEVIN, M.M.

Effect of the rapidity of mold rotation on the structure of steel castings. Izv. vys. ucheb. zav.; Chern. met. no.3:77-80 '64.
(MIRA 17:4)

1. Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya.

MIRZOYAN, G. S.

shrinkage porosity during the centrifugal casting of steel ingots.
Izv. vys,ucheb.zav.; Chern.Met.7 no. 5:140-146 '64. (MIRA 17:5)

1. Tsernitskiy nauchno-issledovatel'skiy institut tekhnologii
i mashinostroyeniya.

BERG, P.P.; MIRZOYAN, G.S.

Shrinkage phenomena in thick-walled steel centrifugal castings.
Lit. proizv. no.11:20-21 N '64. (MIRA 18:8)

L 36810-66 EWP(k)/EWT(m)/T/EWP(w)/EWP(t)/ETI 1:P(c) JN/JW
 ACC NR: AP6024260 SOURCE CODE: UR/0128/66/000/001/0010/0011

AUTHOR: Mirzoyan, G. S. (Candidate of technical sciences); Zav'yakov, V. F.
 (Engineer); Tinyakov, V. G. (Engineer)

ORG: none

TITLE: Centrifugal casting of thin-wall steel shells

SOURCE: Liteynoye proizvodstvo, no. 7, 1966, 10-11

TOPIC TAGS: steel, alloy steel, chromium-containing steel, silicon-containing steel, nickel-containing steel, tungsten-containing steel, vanadium-containing steel, tube shell, tube shell casting, centrifugal casting, 30KhSNVFA steel

ABSTRACT: The possibility of manufacturing 30KhSNVFA steel tube shells 520 mm in diameter, 15-70 mm wall-thickness, and up to 400 mm long, has been investigated. The steel was melted in a basic induction furnace and cast at 1530-1540°C in a water-cooled mold at a speed of 600 rpm. Shells with a wall thickness of about 15 mm, cast in 50-30 sec with a metal solidification rate of 0.50-0.90 mm/sec, were found to have longitudinal cracks. No cracks were observed when the pouring time was reduced to 10 sec, and the solidification rate was increased to 1.10-1.70 mm/sec. Castings, annealed at 1100°C for 4 hr, furnace cooled to 400°C, and then air cooled, had a hardness of about HB228, a tensile strength of 79-89 kg/mm², a yield strength of 52-58

UDC: 621.74.042:669.141.25

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L 30810-56

ACC NR: AP6024260

kg/mm², and a microstructure consisting of lamellar perlite and sorbite without nonmetallic inclusions. The shells were successfully hot rolled into tubes 500 mm in diameter with a wall thickness of 5 mm. Orig. art. has: 3 figures and 2 tables.

[AZ]

SUB CODE: 13/ SUBM DATE: none/ ORIG REF: 001/ ATD PRESS: 5039

Card 2/2

MIRZOYAN, L.B., kandidat fiziko-matematicheskikh nauk.

Fluctuations in the brightness of the Milky Way. Uch. zap.
Eriv. gos. russ. ped. inst. 5:217-225 '55. (MLRA 9:10)

(Milky Way)

MIRZOYAN, L.V.

Statistics of double stars of the Wolf-Rayet type. Dokl. AN Arm. SSR.
10 no.5:193-197 '49. (MIRA 9:10)

1. Byurakanakaya Astrofizicheskaya Observatoriya Akademii nauk
Armenianskoy SSR. Predstavleno V.A. Ambartsyanyan.
(Stars, Double)

MIRZAYAN, L. V.

Stars - Spectra

Spectrophotometric investigation of a star series of early spectral types.
Sov. Astr. obs. no. 1, 1961.

Monthly List of Russian Acquisitions. Library of Congress, November 1961. (1961-1962).

MIRZOYAN, L.V.

Atmospheric extinction. Izv. AN Arm. SSR. Ser. FMET nauk 6 no.2:
13-18 Mr-Apr '53.

(MLRA 9:8)

1. Byurakanskaya astrofizicheskaya observatoriya AN Armyanskoy SSR.
(Atmospheric transparency)

MIRZOYAN, L.V.

One parameter of continuous star spectrum. Dokl.AN Arm.SSR 16 no.5:
129-136 '53. (MLBA 9:10)

1.Byurakanskaya astrofizicheskaya observatoriya Akademii nauk Armyan-
skoy SSR. Predstavleno V.A.Ambartsumyanom.
(Stars--Spectra)

MIRZOYAN, L. V.

"Spectrophotometry of Continuous Spectrum of Hot Stars," Astr. zhur., 30, No.2, 1953, pp. 153-60. Byurkan Astrophys. Observ., AS GeoSSR

Spectrophotometric studies of stellar classes O and B were processed by author in 1949 (Soobshcheniya Byurakanskoy Observatorii 7, 1951). He presents research results of additional 34 hot stars with alpha Lyrae as comparison star.
Received 20 Nov 52.

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GURZADYAN, G.A.; MIRZOYAN, L.V., redaktor; ARZUMANYAN, G.A., redaktor;
KAPLANYAN, W., tekhnicheskiy redaktor

[Problems in the dynamics of planetary nebulae] Voprosy dinamiki
planetarnykh tumannostei. Erevan, Izd-vo AN Armianskoi SSR, 1954.
210 p.

(Nebulae)

(MLRA 9:2)

MIRZOYAN, L.V.
MIRZOYAN, L.V.

Cosmic absorption of light. Izv.AN Arm.SSR Ser.~~FMET~~ nauk 7
no.3:45-52 My-Je '54. (MLRA 8:3)
(Absorption of light) (Cosmic physics)

MIRZOYAN, L.V.

Photometric studies of the continuous spectra of 10 hot stars.
Sov. Byur. obser. no. 16:41-52 '55. (MLRA 9:4)
(Stars--Spectra) (Spectrophotometry)

MIRZOYAN, L. V.

USSR/ Astronomy - B-stars

Card 1/1 Pub. 21a - 1/5

Authors : Mirzoyan, L. V.

Title : On the spectro-photometric temperatures of B-stars

Periodical : Dok. AN Arm. SSR 20/1, 3-7, 1955

Abstract : A derivation of the scale of spectro-photometric temperatures in the continuous B-star spectrum is presented. The effect of selective cosmic absorption on energy distribution along the B-star spectrum has been taken into account in the derivation. Ten references: 1 French, 4 USSR, 5 USA (1938-1952). Tables.

Institution : Acad. of Arm. SSR, Byurakan Astrophysical Observatory

Presented by : Academician V. A. Ambartsumian, October 23, 1954

MIRZOYAN, L.V.

Notes on the radiation of the BD⁰922 variable. Dokl. An SSSR 105
no.5: 931-934 D '55. (MLRA 9:3)

1. Byurakanakaya astrofizicheskaya observatoriya Akademii nauk
ArmSSR. Predstavleno akademikom V.A. Ambartsumyanom.
(Stars, Variable)

MIRZOYAN, I.V.

"Concluded that certain peculiarities in changes of twinkling and spectra of nonstationary stars cannot be explained by the usual sources of energy, a paper presented at the Conference on Nonstationary stars held at the Byurekan Astrophysics Observatory of the Academy of Sciences Armenian SSR from September 20-23 1956.

Sum. I287

MIRZOYAN, L.V.

~~no.19:43-63~~
Spectrophotometric investigation of AG Draconis. Soob.Biur.obser.
no.19:43-63 '56. (MLR 9:11)
(Spectrophotometry) (Stars, Variable)

MIRZOYAN, L. V.

"A Few Notes on Stars with Continuous Emission in Spectra," paper presented
at the Eighth International Congress on Astrophysics, Liege, Belgium, 8-10 July 1957

MIRZOYAN, L.V.

Unsuccessful translation (with summary in Russian). Izv. AN Arm.
SSR. Ser. fiz.-mat. nauk 10 no.5:123-126 '57. (MIRA 11:2)
(Sun—History)

AMBARTSUMYAN, V.A.; MIRZOYAN, L.V.

The Biurakan Astrophysical Observatory of the Academy of Sciences
of the Armenian S.S.R. Trudy Inst. ist. est. i tekhn. 17:485-492 '57.

(MIRA 10:7)

(Biurakan--Astronomical observatories)

(Astrophysics--Bibliography)

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AUTHOR: Mirzoyan, L. V.

TITLE: Opening of the Byurakan Astrophysical Observatory of the Ac. Sc. of the Armenian SSR and Conference on non-stationary stars. (Otkrytiye Byurakanskoy Astrofizicheskoy Observatorii Akademii Nauk Armyanskoy SSR i Soveshchaniye po nestatsionarnym zvezdam).

PERIODICAL: "Astronomicheskiy Zhurnal" (Journal of Astronomy), 1957, Vol. 34, No. 2, pp. 307-309 (USSR).

ABSTRACT: The observatory is located about 30 km North-West of Erivan, the capital of Armenia. It is at about 1500 m above sea level. The opening was attended by scientists from many countries, among them Prof. Greenstein and Dr. Harbig (U.S.A.) and Prof. Aro (Mexico). A telegram of good wishes was received from the American Astronomical Society. The purpose of the conference was to discuss the problem of non-stationary stars, in particular, stars of type T Tau.

V. A. Ambartsumyan, the director of the observatory, gave a review paper in which the following questions were considered:

- 1) Classification of stars of type T Tau.
- 2) Luminosity curves for such stars.
- 3) Changes in colour index for this type.
- 4) T-associations and their connection with diffuse nebulae.

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Opening of the Byurakan Astrophysical Observatory of the Ac.Sc. of the Armenian SSR and Conference on non-stationary stars. (Cont.)

Dr. Herbig summarised observed facts. According to him, at the present time, it is convenient to consider two types of continuous emission

- 1) Continuous emission observed in spectra of all stars of type T Tau, which fogs the absorption lines
- 2) Continuous emission observed in spectra of some stars of the above type, having moderate and low luminosities, and with an intensity maximum at about λ 3700 Å.

Aro and Herbig showed that it is impossible to explain observational data on bright U.V. stars by the usual line and continuous Balmer emission. Herbig considers that in order to elucidate the nature of the continuous emission of the two types given above, it is necessary to obtain more data.

Greenstein read a communication from Walker (Mt. Wilson) giving results of three-colour photoelectric observations of some open stellar clusters (NGC 6530 and NGC 2264). Colour-luminosity diagrams indicate that these two clusters have the usual appearance in the interval from the brightest stars to stars of type A0. All stars above the main sequence are of type T Tau. Walker

Opening of the Byurakan Astrophysical Observatory of
the Ac.Sc. of the Armenian SSR and Conference on
non-stationary stars. (Cont.)

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considers that these two clusters are very young.
There is evidence that NGC 6611 and IC 5146 have
similar properties.

L. V. Mirzoyan considered the properties of the
radiation from the variable AG Draconis which has a
number of properties in common with stars of type T Tau.
The distribution of energy in the continuous spectrum
of this star and its changes with time, support the
hypothesis of non-thermal nature of the continuous
emission observed in its spectra.

G. S. Badalyan submitted results from two-colour
photographic observations of T, UX, and XZ Tau and
AG Draconis.

Prof. Severnyi spoke on "Non-stationary generation of
continuous emission in active areas on the Sun", and
"Special character of line emission in active areas
on the Sun". He pointed out that the processes
involved in the above may be similar to those causing
the continuous emission from stars of type T Tau.
Prof. Severnyi read a paper by the late G. A. Shain
on "Magnetic field of the Galaxy".

Prof. Ambartsumian spoke on "Dense clouds of relativistic
electrons" and "On the release of energy from flares
under photospheric layers". The first of these reported

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Opening of the Byurakan Astrophysical Observatory of the Ac.Sc. of the Armenian SSR and Conference on non-stationary stars. (Cont.)

calculations on continuous emission of non-stationary stars on the basis of relativistic radiation from electrons in a magnetic field. In the second paper, the author considers internal manifestations of processes leading to emission of discrete portions of energy when the latter occurs under photospheric layers. Z. E. Khachikyan spoke on "Luminescence of the nebula IC 432". Colourimetric measurements have shown that the colour of the nebula is unusually blue. This supports the hypothesis that the luminescence is not due to reflection of light of the central star and has a non-thermal nature.

Prof. Greenstein announced that observations on NGC 2261 show that changes in its luminosity are very slow, and the spectrum of the nebula is similar to that of the star. Here reflection predominates.

Prof. Sobolev gave a review paper on the question of the origin of bright lines in the spectra of stars of type T Tan.

V. G. Gorbatskii spoke on "Some non-stationary processes in the atmospheres of long-period variable stars".

G. A. Aro announced a number of new and interesting facts on bright U.V. stars and galaxies.

Opening of the Byurakan Astrophysical Observatory of
the Ac. Sc. of the Armenian SSR and Conference on
non-stationary stars. (Cont.)

J. Greenstein: "Possible sources of energy for stars
of type T Tau".

J. Herbig spoke on the possible applications of nuclear
physics in the problem of energy sources of stars of
type T Tau.

G. A. Mel'nikov pointed out that necessity of taking
into account absorption bands in the infrared region
in the spectra of these stars.

Prof. Greenstein gave a paper on "Stars of SS Cyg as
spectroscopic binaries".

Ye. Shatsman: "On vibrational stability of stars" and
"Cosmogonic significance of stars of type T Tau".

B. E. Markoyan: "On the interrelation between diffuse
and emission galaxies and early clusters".

P. N. Kholopov, G. Herbig and G. Aro prepared the
following scheme for the classification of stars of type
T Tau.

- I - proper variables.
- I_i - improper variables.
- I_{na} - improper variables, associated with
nebulae and showing bright H_α line
in their spectra.

Opening of the Byurakan Astrophysical Observatory of⁵¹⁶
the Ac.Sc. of the Armenian SSR and Conference on
non-stationary stars. (Cont.)

I_{ne} - improper variables with an emission
spectrum, associated with nebulae,
but not pertaining to type T Tau as
such (Z CMa, R CrA, ABAur etc.

I_{nT} - improper variables of type T Tau
associated with nebulae.

I_{nf} - bursting stars in nebulae.

I_s - improper variables of type RW Aurigae
(in the sense of Hoffmeister).

Recd. Jan. 19, 1957.

MIRZOYAN, L.V.; KHACHIKYAN, E.Ye.

Observations of Mrkos' comet (1957 d). Astron.tsir. no.186:3-5 N '57.

1. Byurakanskaya astrofizicheskaya observatoriya All ArmSSR.
(Comets--1957)

PHASE I BOOK EXPLOITATION

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Mirzoyan, Lyudvik Vasil'yevich

Dyurakanskaya astrofizicheskaya observatoriya (Dyurakanskaya Astrophysical Observatory) [Moscow] Izd-vo AN SSSR, 1958. 29 p. 3,000 copies printed.

Sponsoring Agencies: Akademiya nauk SSSR, Akademiya nauk Armyanskoy SSR.

Resp. Ed.: Kulikovskiy, P.G.; Ed. of Publishing House: Veger, A.L.;
Tech. Ed.: Guseva, I.N.

PURPOSE: This book is for amateur astronomer

COVERAGE: The booklet describes the Dyurakan Astrophysical Observatory at Yerevan, one of the newest in the USSR, and reviews the preliminary results of scientific work conducted there. It was

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Byurakan Astrophysical Observatory 1006

first organized in 1933 as an affiliate of the Yerevan State University and later brought under the direct jurisdiction of the Academy of Sciences of the Armenian SSR. Its final official dedication took place on September 19, 1956. The observatory is situated at $40^{\circ}27'7''$ N latitude and $2^{\circ}27'10''$ E longitude and an elevation of 1,500 m. Its director is V.A. Ambartsumyan. The observatory's principal fields of activity are the study of galaxies, the origin and life of stars, and nebulae, radio astrophysics, and astronomy beyond the galactic system. Among its various instruments are: a double 5" astrograph with an "Ernostar" objective ($f=240$ mm) and an effective field 300 square degrees, an 8"-12" Schmidt telescope ($f=1.0$ m), an 10" spectrograph-telescope developed by O.A. Melnikov and B.K. Ionnisiani, a nebular spectrograph, a 16" non-abberation telescope, a 6" double astrograph with a Zeiss objective, a Schmidt telescope, and a radio telescope. The booklet is profusely illustrated with photographs of the observatory and its instruments. There are no references. There is no Table of Contents.

AVAILABLE: Library of Congress
Card 2/2

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1-5-59

3(1)

AUTHOR:

Mirzoyan, L.V.

TITLE:

On the K-Effect of the O-B Stars (O-K effect) (B. Adams)

PERIODICAL:

Izvestiya Akademii Nauk Armianskoy SSR, Seriya Matematicheskikh Nauk, 1980, Vol. 2, No. 1, pp. 1-11.

ABSTRACT:

Since the problem of the K-effect (discovered by B. Adams fifty years ago) has not yet been solved, the author has the opinion that an analysis of the newest data can be useful. 330 stars up to the spectral domain O-B0.5 from the catalog of B. Adams were analyzed. It was stated: the magnitude of the K-effect is a certain decreasing function of the median brightness; it decreases down to 0 and then it becomes negative, regularly increasing with regard to the absolute value. The observations speak for material emission from the surface layers of the O-B0 stars. It is referred to the paper of B. Adams [Ref '9].

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On the K-Effect of the O-B0 Stars

There are 3 figures, 4 tables, and 22 references, 6 of which are Soviet, 12 American, 3 English and 1 Dutch.

ASSOCIATION: Byurakanskaya astrofizicheskaya observatoriya AN Armyanskoy SSR (Byurakan Astrophysical Observatory AC Armenian SSR).

SUBMITTED: August 12, 1958

Card 2/2

20-119-4-11/60

AUTHOR: Mirzoyan, L. V.

TITLE: On the Problem of the Nature of Continuous Emission (K voprosu o prirode nepreryvnoy emissii)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 119, Nr 4, pp. 667 - 670 (USSR)

ABSTRACT: In the present report the totality of data concerning continuous emission in the spectra of AG Dra, NX Mon and VY Ori is discussed, and some remarks are added concerning the interpretation given by K. H. Böhm (Bem) (Reference 6). Böhm (Bem) was the first to suggest that continuous emission can not only be caused by thermal radiation, but also not by the direct emission of relativistic electrons in magnetic fields. In his paper Böhm (Bem) also proffers a new explanation of continuous emission. Characteristic peculiarities of continuous emission of some non-stationary stars are the variability of their intensity and the considerable increase of this intensity towards the ultraviolet domain. In thermal radiation the value $n = -d(\lg I_\lambda)/d(\lg \lambda)$, which characterizes the velocity of the modification of the intensity I_λ as a function of the wavelength

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On the Problem of the Nature of Continuous Emission

20-119-4-11/60

λ , increases with an increase of the temperature T , but it always remains below 4. Only in the limiting case, when the temperature of the absolutely black body tends towards infinity, does the maximum of this value attain the value 4. Accordingly, it would seem that I_λ could in processes of thermal radiation, not increase more rapidly than λ^{-4} . However, the data concerning continuous emission in the spectra of η Mon and γ Ori, which were measured by Böhm (Bem), show that intensity increases much more rapidly in these stars. A similar sharp increase of the intensity of continuous emission in the ultraviolet domain is observed also in α Dra. A comparison of the values of n for different wavelengths for the range of continuous emission up to $\lambda = 3770 \text{ \AA}$. n increases in all cases with a reduction of wavelength down to $\lambda = 3770 \text{ \AA}$. The value of n then changes in a different manner in different cases. According to the data given here, neither thermal radiation nor direct radiation of relativistic electrons in magnetic fields (synchrotron radiation) can lead to the observed energy distribution of the stars mentioned. Therefore, continuous emission is probably due to

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On the Problem of the Nature of Continuous Emission

20-119-4-11, 60

processes which, by their nature, differ considerably from thermal radiation as well as from the synchrotron radiation of relativistic electrons. The author then makes the interpretation suggested by Böhm the subject of his own critical comments. The entire complex of the observed peculiarities characterizing the radiation of stars with continuous emission in the spectra can hardly be explained by a fusion of emission lines owing to an insufficient resolving power of the spectrograph. However, the idea of a fusion of lines as a result of physical causes deserves a certain amount of attention. In conclusion, the author expresses his gratitude for the kind assistance rendered to him and thanks V. A. Ambartsumyan for his valuable advice in some cases. There are 1 figure, 1 table and 7 references, 4 of which are Soviet.

ASSOCIATION: Byurakanskaya astrofizicheskaya observatoriya Akademii nauk ArmSSR
(Byurakan Astrophysical Observatory AS Armenian SSR)

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On the Problem of the Nature of Continuous Emission 25-11-1957

PRESENTED: December 2, 1957, by V. A. Ambartsunyan, Member, Academy of Sciences, USSR

SUBMITTED: November 28, 1957

Card 4/4

MIRZOYAN, L.V.; KHACHIKYAN, E.Ye.

Investigation of Mrkos' comet (1957d). Part 2. Photometry of the
comet's luminosity. Soob.Biur.obser. no.27:15-30 '59. (MIRA 14:9)

(Comets--1957)

AMBARTSUMYAN, Viktor Amasaspovich; ARAKELIAN, M.A. [translator]; MIRZOYAN, L.V. [translator], red.; PARSAMYAN, E.S. [translator]; TOVMASYAN, G.M. [translator]; KHACHIKYAN, E.Ye. [translator]; SOBOLEV, V.V., red.; KAPLANYAN, M.A., tekhn.red.

[Scientific works in two volumes] Nauchnye trudy v dvukh tomakh. Pod red. V.V.Soboleva. Yerevan, Izd-vo Akad.nauk Armianskoi SSR. Vol.1. 1960. 428 p. Vol.2. 1960. 360 p. (MIRA 13:11)

1. Sotrudniki Byurakanskoy astrofizicheskoy observatorii (for Arakelyan, Mirzoyan, Parsamyan, Tovmasyan, Khachikyan). (Astronomy)

MIRZOYAN, L.V.

Size of Oort's constant A and the velocity of the motion
of the sun through the O-B0 stars. Dokl. AN Arm. SSR 30
no.1:55-59 '60. (MIRA 13:7)

1. Byurakanskaya astrofizicheskaya observatoriya Akademii
nauk Armyanskoy SSR. Predstavleno akad. V.A.Ambartsunyanom.
(Sun)

MIRZOYAN, L.V.

Expansion of associations of stars. Soot. Ekr. otser. no. 24: 81-105
'61. (MIRA 15:1)
(Stars--clusters)

ACCESSION NR: AR3006007

8/0269/63/000/007/0004/0004

SOURCE: RZh. Astronomiya, Abs. 7.51.35

AUTHOR: Ambartsumyan, V. A.; Mirzoyan, L. V.

TITLE: Development of astrophysics in Soviet Armenia

CITED SOURCE: Sb. nauchn. tr. Sovet po istorii yestestvozn. i tekhn. AN ArmSSR, v. 2, 1962, 21-44

TOPIC TAGS: astrophysics, Armenian astrophysics, stellar astronomy Byurakan Observatory

TRANSLATION: The establishment of Soviet power in Armenia gave a powerful impetus to development of science in the country, including astronomy. Of special importance was the founding (1943) of the Academy of Sciences ArmSSR. 1946 saw the founding of the Byurakan Observatory which soon began to engage in major research on stellar astronomy and astrophysics. Starting with the study of the interstellar absorptive medium, the Byurakan astronomers then passed on

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ACCESSION NR: AR3006007

to the study of the spatial distribution of stars. The discovery of stellar associations and the conclusion regarding the continuing process of stellar formation in the Milky Way were major scientific achievements. Subsequently, the problem of studying the young stars in their unstable states arose. In recent years important work has been done on the morphology and statistics of galaxies, including galaxies which are sources of cosmic radiation. The 28 issues of the Roobshcheniya Byurakanskoy Observatorii (Reports of the Byurakan Observatory) contain about 300 papers. Recently, the Observatory was supplied with powerful new instruments which will increase its research capabilities and open up wide prospects for future work. Yu. Perel'.

DATE ACQ: 15Aug63

SUB CODE: AS

ENCL: 00

Card 2/2

MIRZOYAN, L.V.

Law of the distribution of O-B1 stars around the nuclei of
the O-associations. Soob. Biur. obser. no. 23:41-53 '63.
(MIRA 17:5,

1. 12851-61

ACCESSION NR: AF3000294

EST(1)/FCC(W)/EDS/ES(V)

AFTC/ESD-3
8/0020/65/150/001/0068/0070AUTHOR: Mikheyev, L. V.

TITLE: Noninterrupted occurrence of stars in the O-association

SOURCE: AN SSSR. Doklady, v. 150, no. 1, 1963, 68-70

TOPIC TAGS: occurrence of stars, O-association

ABSTRACT: In accordance with the theory of stellar association developed by V. A. Ambartsumyan (Astr. Zhurn., 26, 3, 1949), the formation of stars takes place on the subsurface of the galaxy. As a result of expansion and subsequent disintegration of stellar associations, the newly-formed stars enter the general galactic field. For each moment of life around the association nuclei, a definite distribution of stars must be observed according to the existing stipulation that the intensity of star formation is dependant upon time. The calculation of the "average age" of stars is presented in equation (1) of the enclosure. The observed law of stellar distribution $r \sup -3$ and $r \sup -2$ is also presented. The number of stars around the nuclei which exit from the sphere of a radius $r \sub 0$ and extend to a distance of r but remain in the observed class is determined from equation (2) of the enclosure. The presented calculations show a rough rate of development of O-B1-stars, and the presented observation is of benefit for the verification of

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L 12853-63

ACCESSION NR: AF3000294

uninterrupted occurrence of stars in the stellar associations. The orig. art. has:
6 formulas, 2 tables, and 1 figure.

ASSOCIATION: Byurekanskaya astrofizicheskaya observatoriya Akademii nauk ArmSSR
(Byurekan Astrophysical Observatory, Academy of Sciences, ArmSSR)

SUBMITTED: 27Dec62

DATE ACQ: 10Jun63

ENCL: 02

SUB CODE: AS

NO REF SOV: 004

OTHER: 003

Card 2/12

SOURCE CODE: UR/0269/65/000/010/0028/0029

ACC NR: AR6004666

AUTHOR: Mirzoyan, L. V.

TITLE: Distribution of O--B stars in the Perseus I association

SOURCE: Ref. zh. Astronomiya, Abs. 10.51.234

REF SOURCE: Soobshch. Byurakansk. observ. vyp. 35, 1964, 75-87

TOPIC TAGS: star cluster, stellar system

ABSTRACT: In a preceding work the author assumed that the average distribution of the partial density of O--B stars can be represented by the law $\sim r^{-3}$, where r is the distance from the center of the association. With further studies it was shown that there is no single law of the stellar density distribution of the form $\sim r^{-n}$; the exponent n increases with increasing distance, varying from 2 in the vicinity of the center to 4 at a distance of 0.3--0.4 kpc. In the present work the spatial stellar density distribution around the nucleus of the association is represented by a "hyperbolic" law

$$(\lg d)^2 = (2 \lg r - a)^2 - b^2$$

where a and b are constants. The asymptote of this hyperbola in the first quadrant corresponds to the law $d(r) \sim r^{-2}$. The distribution function of the stellar density in the association n and χ^2 Per was obtained to verify this result as illustrated by the specific association. One hundred and sixteen stars of spectral class O--B5 lie

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ACC NR: AR6004666

within a circle of radius 200'. A list of these stars, distribution diagrams of the stars, and their distribution in interval modulus are presented. The average interval modulus of the association is 11^m.5, the distance of the association from the sun is 2.1 kpc, the average radial velocity is -40.7 km/sec, and the expansion velocity is -15 km/sec. The dynamic age of the association is 10⁷ yr. Tables of the spectral distribution of the stars (average spectral class is B 0.5), the distribution of probable members of the association in angular distance φ from the center, and a table of the computed values of the plane stellar density $a(\rho)$, where ρ is the linear distance from the center of the association, are presented. A diagram of the dependence of $\log a(\rho)$ on $-2 \log \bar{\rho}$ is also presented. The value $n = 1.42 \pm 0.16$ was calculated for the exponent in the law $\sim \rho^{-n}$. The obtained results are compared with the results pertaining to the synthetic "association" of the preceding work of the author. Agreement is satisfactory. A table comparing the number of stars expected in each ring around the center of the association with the average distribution law $\sim \rho^{-1.42}$ with the observed number of stars is presented. The transformation from plane to spatial density is carried out. A table and diagram are presented. The results verify the conclusion that the partial density of O-B1 stars around nuclei of associations decreases with increasing distance. Bibliography of 10 citations. Zh. Anosova [Translation of abstract]

SUB CODE: 03

Card 2/2

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Article 100 of the Constitution of the United States of America.

no.

... Ambarzumyanom.

Ambar tsurnyanom.

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~~SECRET~~ ENT(1)/ENG(r)/EEC(t) Pa-5/Pae-2 GM
 S/0269/65/000/003/0020/0020
 ACCESSION NR: AR5008860

SOURCE: Ref. zh. Astronomiya. Otdel'nyy vypusk, Abs. 3.51.162

AUTHOR: Mirzoyan, L. V.

TITLE: The new flaring variable star SPZ (spectrum variable) 1451 in Orion

CITED SOURCE: Astron. tsirkulyar, no. 294, apr. 24, 1964, 1

TOPIC TAGS: star, variable star, spectrum variable star, astrophysics, Orion, Orion nebula

TRANSLATION: A new flaring variable with the coordinates $\alpha 1900 = 5^h 51^m 06^s$; $\delta = 16^m 1$ has been discovered on photographs taken at the Byurakanskaya astrofizicheskaya observatoriya (Byurakan Astrophysical Observatory) on 25 October 1962 in the region of the Orion nebula.

SUB CODE: AA

ENCL: 00

Cord 1/1

MIRMOYAN, L.V.

Distribution of G-B stars in the association Perseus I. Phot.
Blur. obser. no. 35175-87 '64. (MIRA 18-8)

MIRZOYAN, L.V.; KAZARYAN, F.S.

Spectrum of RW Aurigae in the region λ 3600-4800. *Astrofizika*
1 no.2:213-223 Jo '65. *IMPA 12.10.*

1. Byurakanakaya astrofizicheskaya observatoriya.

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001134610017-7

ALL KAZAKH

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001134610017-7"

BABAYAN, A.T.; AZIZYAN, T.A.; ARAKELYAN, E.M.; GEVORKYAN, S.B.;
MIRZOYAN, M.K.

Cleavage reactions in quaternary ammonium compounds. Report No.1:
Reaction of salts containing a butyn-2-yl group with alkali
hydroxide. Izv.AN Arm.SSR.Khim.nauki 15 no.5:429-434 '62.
(MIRA 16:2)

1. Institut organicheskoy khimii AN Armyanskoy SSR.
(Ammonium compounds)
(Alkalies)
(Butynyl group)

MIRZONYAN, N. A.

"The Treatment of Visceral Leishmaniasis with Stilbaidine", Med. Paraz. i Paraz. Bolez., Vol. 17, No. 4, P 349-2, 1948.

MIRZOYAN, H.A.

On certain published works on visceral leishmaniosis. Med. parazit. i parazit. bol.
no. 4: 363-364 J1-Ag '59. (MLRA 6:9)
(Leishmaniosis)

MIRZOYAN, N.A.

Treating malaria with synthetic preparations of acridine series nos. 315 and 317. Med. paras. i paras. bol. no. 5:427-430 8-0 '53. (MLRA 6:12)

1. Iz Uzbekistanskogo instituta malyarii i meditsinskoy parazitologii (Malarial fever) (direktor - professor L.M. Isayev).

MIRZOYAN, N. A.

"The Treatment of Visceral Leishmaniasis," paper presented at the Joint Scientific Session held by AMS USSR and Min. of Pub. Health Uzbek SSR on 'Problems of Regional Pathology, 20-25 Sept 54, Tashkent, page 34.

Attachment of B-98525, 30 Jul 56

In U. of Cal. Library

MIRZOYAN, N.A.

Comparative evaluation of the effectiveness of antimony preparations
in the treatment of visceral leishmaniasis. Med. paras. i paras. bol.
no.2:161-164 Ap-Je '54. (MLBA 7:8)

1. Iz Usbekskego instituta malyarii i meditsinskoy parasitologii
(dir. instituta prof. L.M. Isayev)
(LEISHMANIASIS, therapy.

*visceral, antimony prep.)
(ANTIMONY, therapeutic use,
*leishmaniasis, visceral, comparison of various prep.)

MIRZOYAN, N.A.

"Treatment of visceral leishmaniasis (kala-azar) with soliusur'min.
G.M. Maruashvili. Reviewed by N.A. Mirzolian. Med. paraz. i paraz. bol.
no. 4:371 O-D '54. (MLRA 8.2)

(MARUASHVILI, G.M.) (KALA-AZAR)
(ANTIMONY--THERAPEUTIC USE)

PIFMAN, Nikolay Aleksandrovich

PIFMAN, Nikolay Aleksandrovich (Uzbekistan Inst of Malaria and Venereal Pathology), Academic degree of Doctor of Medical Sciences, based on his defense, 28 June 1955, in the Council of the Central Inst for the Advanced Training of Physicians, of his dissertation entitled: "Clinic and treatment of visceral leishmaniasis."

For the Academic degree of Doctor of Sciences

Byulleten' Ministerstva Vysshego Obrazovaniya SSSR, Part No.7, 31 March 1956
Decision of Higher Certification Commission concerning Academic Degrees and Titles.

JPRS 512

MIRZOYAN, N.A.

Duration of the incubation time in visceral leishmaniasis. Med.
paraz. i paras. bol. 24 no.4:334-337 O-D '55. (MLRA 9:1)

1. Iz Uzbekistanskogo instituta malyarii i meditsinskoy parazitologii
(dir. instituta - prof. L.M. Isayev).
(LEISHMANIASIS,
visceral, incubation time)

MIRZOYAN, N.A.

~~Course and therapy of visceral leishmaniasis complicated by other diseases.~~ Course and therapy of visceral leishmaniasis complicated by other diseases. *Pediatrics* 39 no.6:62-66 M-D '56. (MLHA 10:2)

1. Is Sumarkandskoy oblastnoy protivomalyariynoy stantsii (zav. V.V.Gevorkov)

(LEISHMANIASIS, VISCERAL, in infant and child, compl. (Rus))

MIRZOYAN, Y A

MIRZOYAN, N.A.; SMROKUROVA, N.A.

Treating malaria patients with synthetic preparations Nos.333 and
343. Med.paraz. i paraz.bol.supplement to no.1:23 '57. (MIRA 11:1)

1. Iz Instituta malyarii i meditsinskoy parazitologii Ministerstva
zdavookhraneniya Uzbekskoy SSR.
(ANTIMALARIALS)

MIRZOYAN, N.A.

Occurrence of visceral leishmaniasis in the U.S.S.R. Med.perez. i
paras.bol.supplement to no.1:47 '57. (MIRA 11:1)

1. Iz Samarqandskoy oblastnoy protivomalyariynoy stantsii.
(KALA-AZAR)

MIRZOYAN, M.A.

Treatment of visceral leishmaniasis in adults. Sov.med. 21 no.9:113-117 S '57. (MIRA 11:1)

1. Iz Samar'kandskoy oblastnoy sanitarno-epidemiologicheskoy stantsii (glavnyy vrach V.A.Aleksandrova)
(LEISHMANIASIS, VISCERAL, ther. follow-up on adults)

MIRZOYAN, H.A.

Antimony resistance in the treatment of visceral leishmaniasis.
Med.paraz. i paraz.bol. 26 no.3:277-280 My-Je '57. (MIRA 10:11)

1. Iz Samarqandskoy oblastnoy protivomalyariynoy stantsii (zav. -
A.A.Gevorkov).

(LEISHMANIASIS, VISCERAL, therapy,

antimony, resist. (Rus))

(ANTIMONY, therapeutic use,

leishmaniasis, visceral, resist. (Rus))

MIRZOYAN, N.A.

Occurrence of visceral leishmaniasis in the southern republics
of U.S.S.R. in relation to the age of the patients. Med. zhur.
Usb. no. 11:25-27 N '58. (MIRA 13:6)

1. Iz konsul'tatsionnogo kabineta parazitologicheskogo otdela
Samarkandskoy oblastnoy sanitarno-epidemiologicheskoy stantsii.
(KALA-AZAR)

MIRZOYAN, N.A. (Smarkand)

Clinical picture of visceral leishmaniasis in adults. Klin.med.
36 no.6:34-36 Je '58 (MIRA 11:7)

1. Iz konsul'tatsionnogo kabineta parazitologicheskogo otdela
Samarkandskoy oblastnoy sanitarno-epidemiologicheskoy stantsii
(glavnyy vrach V.A. Aleksandrova, zav. konsul'tatsionnym kabinetom
N.A. Mirzoyan).

(LEISHMANIASIS, VISCERAL, manifest.
clin. manifest. in adults (Rus))

MIROZYAN, N.A.

Forms of visceral leishmaniasis. Med.paraz.i paraz.bol. 27
no.6:674-676 N-D '58. (MIRA 12:2)

1. Iz konsul'tatsionnogo kabineta parazitologicheskogo otdela
Samarkandskoy oblastnoy sanitarno-epidemiologicheskoy stantsii
(zav. stantsiy V.A. Aleksandrova, zav. konsul'tatsionnym kabi-
netom N.A. Mirozoyan)

(LEISHMANIASIS, VISCERAL,
classif. (Rus))

MIKHOYAN, H.A., prof.

Urgent problems in the treatment of visceral leishmaniasis. Med.
zhur. Uzb. no.6:13-16 Je '60. (KLA 15:2)

1. Iz fakul'tetskoy terapevticheskoy kliniki Samark'andskogo gosudar-
stvennogo meditsinskogo instituta imeni I.P.Pavlova.
(KALA-AZAR)

YELINSON, S.V.; POBEDINA, L.I.; MIRZOYAN, N.A.

Analysis of certain zirconium-base alloys. Zhur.anal.khim.
15 no.3:334-338 My-Je '60. (MIRA 13:7)
(Zirconium alloys--Analysis)

MIRZOYAN, N.A., prof

Present state of the problem of visceral leishmaniasis. Med. zhur.
Uzb no.8:54-59 Ag '61. (Mikro 15:1)

1. Iz kafedry terapii Samarxandakogo meditsinskogo inatituta imeni
I.P.Pavlova.

(KALALAZA)

246,2

S/O 42/61/02/1007/002/012
B10/B201

5.5310

AUTHORS: Yelinson, S. V. and Mirzoyan, N. A.
TITLE: Photometric zirconium determination in hafnium by Arsenazo
III reagent

PERIODICAL: Zavoliskaya laboratoriya, v. 1, no. 1, 1967, 246-250

TEXT: The spectral methods hitherto used for determining high Zr concentrations in hafnium are inaccurate. The great similarity of their chemical and physical properties causes identical coloring with organic reagents. At higher acidity, however, some Hf dye complexes are much less stable than the Zr complexes. Thus, Hf dye complexes with nifidalic acid and with 2,4-dinitrobenzidine (DNB) are unstable at high acidity while the corresponding Zr complexes are stable. If the acidity increases from 0.2N HCl to 1N HCl, the optical density of the Arsenazo I-Hf complex drops considerably, while the decrease is low in the corresponding Zr complex. The determination of 0.2% of hafnium oxide in a mixture with zirconium oxide is based thereon. For determining low Zr concentrations in metallic Hf, Arsenazo III synthesized by S. P.

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Photometric zirconium determination

S/032/61/027/007/002/112
B11C/2203

$m\mu$) in cuvettes with 3 cm layer thickness. The molar coefficients ($\epsilon = D/cl$) for both complexes at the activities mentioned were determined by the method of isomolar series. Ten experiments were conducted with the ratio metal: reagent = $2 \cdot 10^{-4}$; $2 \cdot 10^{-5}$, the other ten with reagent excess (Table 1). Thus, it was possible to determine optically low Zr concentrations in metallic hafnium. 10-20 mg of Hf metal was mixed in a Pt bowl with 50 ml H_2O and 1 ml Hf. After dissolution, 1 ml H_2SO_4 (1.84) was added, evaporated until the appearance of SO_3 vapors, mixed with 2-3 ml H_2O , and evaporated to dryness. The residue was dissolved under heating in 4 N HCl, and filled up with 4 N HCl to 500 ml. A liquid volume containing 450/Hf was diluted with 4 N HCl to 25-35 ml, heated to boiling, and mixed with 2 ml of 0.05% Arsenazo III solution. After filling up with 4 N HCl to 50 ml, the optical density was measured by means of FEK-M and red light filter. According to the calibration curve (Fig. 3), the Zr concentration in hafnium was determined. The U^{4+} , Ti^{4+} ions disturb the determination with freshly prepared reagent

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25632

S/C32/61/027/07/02/12
B11C/B2C3

Photometric zirconium determination

(0.05 g Arsenazo III dissolved in 80-90 ml H_2O , mixed with 5 ml of 1 N HCl, and filled up with H_2O to 100 ml. Fe^{3+} must be reduced with

ascorbic acid to Fe^{2+} . Other elements do not disturb. The mean square error σ is about $\pm 20\%$ with 0.5% Zr, and $\pm 10\%$ (with 1% Zr). In the presence of tungsten and molybdenum, the hafnium must be precipitated quantitatively with NH_3 in a centrifuge glass after evaporation of H_2SO_4 and dissolution of the residue in 10-15 ml. In the absence of Zr, Hf is photometrically determined with Arsenazo III in 1 N HCl. For plotting the calibration curve, solutions of 5-50 μ g Hf (at intervals of 5 μ g Hf concentration) are diluted with 25-30 ml of 1 N HCl, and boiled. After cooling, 2 ml of 0.05% Arsenazo III solution is added, and filled up with 1 N HCl to 50 ml. After 30 min. measurement is made by means of FEK-M, a red light filter, and a cuvette with a 3-cm thick layer, and comparison is made with the blank test sample of the reagent dissolved in 1 N HCl. There are 3 figures, 2 tables and 8 references: 7 Soviet-bloc and 1 non-Soviet-bloc.

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